AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A Vestigial Sideband (VSB) receiver comprising:

an intermediate frequency signal generator generating an intermediate frequency band signal from a received signal;

a demodulator generating a complex base band signal consisting of an I channel signal and a Q channel signal using the intermediate frequency band signal and at least one local carrier wave signal; and

a complex base band matched filter filtering at least one of the I channel signal and the Q channel signal, which includes a first base band matched filter filtering a real domain of the I channel signal, a second base band matched filter filtering an imaginary domain of the I channel signal, a third base band matched filter filtering a real domain of the Q channel signal, a fourth base band matched filter filtering an imaginary domain of the Q channel signal, a first adder adding the filtered real domain signals of the I channel and the Q channel output from the first base band matched filter and the third base band matched filter to output the resultant value as a new I channel signal, and a second adder adding the filtered imaginary domain signals of the I channel and the Q channel output from the second base band matched filter and the fourth base band matched filter to output the resultant value as a new Q channel signal.

2. (Cancelled)

3. (Original) The VSB receiver of claim 1, wherein the complex base band matched filter is designed so that a frequency characteristic H(w) is identical to a frequency spectrum R(w) of the base band signal.

4. (Currently Amended) ~~The~~ A Vestigial Sideband (VSB) receiver comprising:

an intermediate frequency signal generator generating an intermediate frequency band signal from a received signal;

a demodulator generating a complex base band signal consisting of an I channel signal and a Q channel signal using the intermediate frequency band signal and at least one local carrier wave signal; and

a complex base band matched filter filtering at least one of the I channel signal and the Q channel signal, which

~~of claim 1, wherein the complex base band matched filter~~ includes a ~~fifth~~ base band matched filter filtering the I channel signal, a ~~sixth~~ base band matched filter filtering the Q channel signal, and an ~~a third~~ adder adding the filtered I channel signal used as the real ~~to the real~~ domain and the filtered Q channel signal used as the imaginary ~~to the imaginary~~ domain to output the added complex signal as a new I channel signal.

5. (Currently Amended) A Vestigial Sideband (VSB) receiver comprising:

a first multiplier multiplying a receiving signal by an intermediate frequency signal to generate an intermediate frequency band signal;

a second multiplier multiplying the intermediate frequency band signal by a first local carrier wave signal to demodulate the intermediate frequency band signal to an I channel signal;

a third multiplier multiplying the intermediate frequency band signal by a second local carrier wave signal to demodulate the intermediate frequency band signal to a Q channel signal; and

a complex base band matched filter filtering at least one of the demodulated I channel signal and the demodulated Q channel to output a complex signal, which includes a first base band matched filter filtering a real domain of the I channel signal, a second base band matched filter filtering an imaginary domain of the I channel signal, a third base band matched filter filtering a real domain of the Q channel signal, a fourth base band matched filter filtering an imaginary domain of the Q channel signal, a first adder adding the filtered real domain signals of the I channel and the Q channel output from the first base band matched filter and the third base band matched filter to output the resultant value as a new I channel signal, and a second adder adding the filtered imaginary domain signals of the I channel and the Q channel output from the second base band matched filter and the fourth base band matched filter to output the resultant value as a new Q channel signal.

6. (Original) The VSB receiver of claim 5, wherein the complex base band matched filter is designed so that a frequency characteristic H(w) is identical to a frequency spectrum R(w) of the base band signal.

7. (Cancelled)

8. (Currently Amended) The VSB receiver of claim 5, wherein the complex base band matched filter includes a ~~fifth~~ base band matched filter filtering the I channel signal, a ~~sixth~~ base band matched filter filtering the Q channel signal, and an ~~a third~~ adder adding the filtered I channel signal used as the real ~~to the real~~ domain and the filtered Q channel signal used as the imaginary ~~to the imaginary~~ domain to output the added complex signal as a new I channel signal.

9. (Currently Amended) The VSB receiver of claim 5, wherein the intermediate frequency signal is 2cos(wc-wi)t; wc=2 πfc where fc is the frequency of the carrier signal and wi=2 πfi where fi is the frequency of the intermediate frequency signal.

10. (Currently Amended) The VSB receiver of claim 5, wherein the first local carrier wave is 2coswit, and the second local carrier wave is 2sinwit; wi=2πfi where fi is the frequency of the intermediate frequency signal.

11-13. (Cancelled)